



Patent
Attorney's Docket No. 005950-537

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)
Richard O. Moore, Jr.) Group Art Unit: 1764
Application No. 09/694,554) Examiner: Walter Griffin
Filed: October 23, 2000) Confirmation No.: 9964
For: Method for Retarding Fouling of Feed)
Heaters in Refinery Processing)

DECLARATION UNDER 37 C.F.R. § 1.132

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

I, Richard O. Moore, Jr., declare as follows:

1. I received a Bachelor of Science in Chemical Engineering (Cum Laude) in 1978 and a Masters in Chemical Engineering in 1979 from Rice University, in Houston, Texas. I received the AIChE Outstanding Graduating Student Award on graduation from my Masters degree.
2. I am a Registered Professional Engineer, State of California and carry the AIChE Professional Development Recognition Certificate.
3. I am employed as an Engineering Consultant for ChevronTexaco Global Downstream LLC. I have been employed as a chemical engineer with Chevron and ChevronTexaco for 25 years.
4. I am an inventor or co-inventor of thirteen U.S. patents and one European patent in Hydroprocessing Technology.
5. I am the named inventor of U.S. Application Serial No. 09/694,554, entitled "Method for Retarding Fouling of Feed Heaters in Refinery Processing"
6. I am familiar with the issues raised in the Office Action dated September 17, 2004, in the above-referenced application. In the Office Action, the

claims were rejected over U.S. Patent No. 4,080,397 ("Derr") in view of U.S. Patent No. 5,738,779 ("Dach"). I have carefully reviewed U.S. Patent Nos. 4,080,397 and 5,738,779. I respectfully, but strongly, disagree with the Examiner's conclusion regarding U.S. Patent No. 5,738,779 ("Dach").

7. I have noted that Dach, at col 1, beginning with line 40, reads as follows:

Hydrogen and oil may be mixed either upstream or downstream of the feed/effluent exchangers. Mixing upstream of the exchangers provides greater temperature differentials, higher heat transfer coefficients and reduced fouling. This is typical of a feed which is fully vaporized in the exchangers.

I have noted that this description is within the section of the patent entitled "2. Description of Other Related Methods in the Field."

8. I interpret Dach as disclosing that according to prior art methods, sufficient hydrogen may be added upstream of the exchangers to result in greater temperature differentials, higher heat transfer coefficients and reduced fouling.

9. It is widely accepted by engineers skilled in heat exchanger design that significant amounts of hydrogen must be added to affect the temperature differentials and heat transfer coefficients of the heat exchanger, as taught in Dach. As such, for the process taught in Dach, hydrogen rates of at least 750 SCF/Bbl would be required. It is not possible for hydrogen addition rates of 100 SCF/Bbl to noticeably affect the stated change in exchanger performance.

10. The "Background of the Invention" section of the present application, U.S. Application Serial No. 09/694,554, also provides a similar description of known prior art processes. As described in the "Background of the Invention" section of the present application, it was known to engineers skilled in heat exchanger design to combine the hydrocarbon feed and a large quantity of hydrogen-rich gas (e.g. greater than 750 Standard Cubic Feet per Barrel (SCFB)) before entering the heat exchanger so that the large quantity of hydrogen-rich gas would act as a velocity maintaining agent to avoid the deposition of particulate matter in the feed. (specification, page 2, lines 12-19).

11. In contrast, the process of U.S. Application Serial No. 09/694,554 is directed to a very specific fouling mechanism, that of polymerization of olefins and/or alcohols upon heating in the heat exchangers. According to the invention of U.S. Application Serial No. 09/694,554, and as presently claimed, very small amounts of hydrogen (less than about 100 SCFB, preferably less than 50 SCFB) are sufficient to prevent or minimize formation of the undesirable heavier molecular weight products from polymerization. This small amount of hydrogen for minimizing polymerization is added prior to pre-heating and is a mere fraction of the total hydrogen used in the hydroconversion step, which follows the heat exchange step.

12. I hereby declare that all statements made herein of my own knowledge are true and that all statements made upon information and belief are believed to be true. I understand that willful false statements and the like are punishable by fine or imprisonment, or both under 18 United States Code section 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Richard O. Moore, Jr.

Richard O. Moore, Jr.

16 - December - 2004

Date